

North Platte River Bridge
Spanning the North Platte River on U.S. Highway 20/26
Douglas
Converse County
Wyoming

HAER No. WY-96

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
Intermountain Support Office - Denver
National Park Service
P.O. Box 25287
Denver, Colorado 80225-0287

HISTORIC AMERICAN ENGINEERING RECORD NORTH PLATTE RIVER BRIDGE

I. INTRODUCTION

Location: T32N-R71W, Section 8, N/SW/NE
Spanning the North Platte River on U.S. Highway 20/26
Douglas
Converse County
Wyoming

USGS Quad: Douglas, Wyoming 7.5'

UTMS: Zone 13/467682 mE/4734367 mN (west end of bridge)
Zone 13/467832 mE/4734324 mN (east end of bridge)

Date of
Construction: 1923

Present Owner: Wyoming Department of Transportation

Present Use: Vehicular bridge

Significance: The bridge is a rare example of a concrete, reinforced, cantilevered structure. At the time of its construction, the Wyoming Highway Department considered it "one of the finest bridges in the state." It is an uncommon example of large-scale use of concrete construction by the Wyoming Highway Department early in its history and was used for a significant river crossing on the important Yellowstone Highway, an interstate highway. It is a major departure from the metal truss bridges and lesser wood timber bridges commonly used throughout Wyoming in the early twentieth century.

Project
Statement: The Wyoming Department of Transportation proposes to replace this bridge with a new bridge structure. The approved mitigation plan for this National Register eligible property consists of Historic American Engineering Record (HAER) recordation, a State of Wyoming Interpretive sign, and a report on the history of the Yellowstone Highway in Converse County, Wyoming, with accompanying maps depicting the historic route and surviving segments built prior to 1928 in Converse County.

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II. HISTORY

The large-scale, production-line manufacturing of affordable automobiles in America was begun by Ransom Olds at his Oldsmobile factory in 1902, but the concept was greatly expanded by Henry Ford. Beginning in 1914, Ford perfected the assembly line concept, in which employees worked at a certain pace with very repetitive motions. As a result, cars came off the line in fifteen-minute intervals, increasing production seven-fold while using less manpower.

Ford also established strict safety procedures and paid high wages for the time. In 1914, an assembly line worker could buy a Model T with four months' pay.¹

With the proliferation of affordable automobiles in America in the 1910s, businessmen recognized the potential for a new market from auto tourism. The main drawback was a lack of viable roads. Therefore, local groups in communities across the United States began meeting to encourage the construction of "good roads." As a major national tourist attraction, Yellowstone National Park became the primary destination for a number of proposed interstate highways. The Lincoln Highway had already been conceived as the nation's first transcontinental highway to connect the east and west coasts, but it passed far to the south of Yellowstone National Park. The "Black and Yellow Trail" was a national highway laid out to connect Chicago, Illinois, with Yellowstone National Park via the Black Hills.

The United States Congress created Yellowstone National Park in 1872 from land set aside in the territories of Wyoming and Montana. The legislation that created the park also emphasized the dual purposes of preservation and protection of the land and public use and enjoyment, a concept that was promoted in the National Park Service Organic Act of 1916. Nathaniel P. Langford, the first superintendent, proposed a road system, a Grand Loop Road that would provide access to the concentration of natural wonders throughout the Park. This development was carried on by his successors. In 1883, the U.S. Army Corps of Engineers assumed responsibility for the construction of roads, and from 1883 to 1918 laid the foundation for the road system that is in use today. By 1905 the Corps, under the direction of Major Hiram M. Chittenden, had completed the Grand Loop and the improvement or construction of four of the five entrance roads. In 1918, the National Park Service assumed control of the administration of Yellowstone, and took over responsibility for road construction and maintenance.²

On August 1, 1915, Yellowstone National Park was opened to automobiles. The horse-drawn stagecoaches that had previously taken visitors around the Grand Loop were

quickly replaced by busses. The emergence of automobile travel in the Park had a democratizing effect on tourist traffic, with the shift from public to private transportation that allowed a wider segment of the population to visit the Park.³

The term "Yellowstone Highway" was used as early as 1911 in a statute enacted by the Wyoming State Legislature. The statute provided for the establishment of a system of public highways in Wyoming and designated the principal towns through which these highways must pass. Seven major highways were identified, and convict labor was to be used to construct or improve the roads. The State Engineer was given the responsibility to supervise the survey and location of the highways. At this time each county was responsible for the cost of the surveys and the construction within their borders.⁴ By statute, the Yellowstone Highway was designated the No. 1 highway and described as follows:

Beginning at a point where the highways between Cheyenne, Wyoming, and Denver, Colorado, cross the line between the State of Wyoming and Colorado, and running and extending thence in a generally northerly direction through the city of Cheyenne and the cities and towns of Chugwater, Wheatland and Douglas; thence continuing in a westerly direction through the towns of Casper and Shoshoni; thence in a northwesterly direction through the towns of Thermopolis and Meeteetse to the town of Cody; thence westerly through the Shoshone canyon to the westerly line of the Shoshone forest reserve to the Yellowstone National Park.

The concept of the Yellowstone Highway was developed by promoters who envisioned a road connecting Denver and Rocky Mountain National Park to Yellowstone National Park. Ezra Emery, the founder of the good roads movement in Laramie County, Wyoming, obtained the endorsement of the county commissioners of Laramie County to petition the state to have the proposed state highway surveyed, along with a petition from two other counties along the proposed route. Emery formally proffered the idea before Wyoming state officials on January 24, 1912; he subsequently met with representatives of the Automobile Blue Book from Chicago and the Clason Map Company to discuss the proposed route and incorporate it into their maps and guidebooks. The proposed route generally followed a series of existing county roads. The distance between Cheyenne and the east entrance of Yellowstone Park was estimated at 543 miles, but the state survey, generally conducted by the various counties through which it passed,

would shorten the route to about 500 miles. After the survey was completed, convict labor would be used to improve the route.⁵

Surveys for the Yellowstone Highway were conducted in Laramie County and Park County during the summer of 1912 under the direction of the State Engineer. A portion of the route through Converse County was also surveyed. In November 1912, State Engineer A.J. Parshall stated that "the entire route across the State is passable for wagons and automobiles under good weather conditions, but is in need of a large amount of work, including the construction of bridges and culverts, the reduction of excessive grades, and ditching and crowning of the road to care for the surface drainage."⁶

The route was scouted in July 1913 by M.R. Collins, H.B. Southwick and F.B. Simpson of Douglas, Mr. Townsend and family and Harold Banner of Casper, and R.A. Woodall, a representative of the Blue Book Publishing Company, the leading road guide publisher in the country. In Wyoming, the tentative route passed through Cheyenne, Wheatland, Glendo, Douglas, and Casper, hence west to Waltman, where the Yellowstone Highway turned northwest through Lost Cabin and basically followed the route of the Bridger Trail pioneered by Jim Bridger in 1864. It then followed a circuitous route over the Bridger Mountains to bypass the Wind River Canyon, which could not be negotiated by wagons or vehicles at that time. The Yellowstone Highway continued north along the Bighorn River through Thermopolis and crossed the Bighorn Basin through Worland, Basin, Greybull, and Cody. It then headed west, following the Shoshone Canyon and the North Fork of the Shoshone River to the east entrance of Yellowstone National Park.⁷

As the Yellowstone Highway was surveyed, practical changes were made to the route that was originally proposed by the Wyoming State Legislature. As early as 1912, the State Engineer recommended that the route over Birdseye Pass in the Bridger Mountains should be amended to pass through Moneta, Lost Cabin, Nowood, Tensleep, Hyattville, Basin, Burlington and Cody. However, once the newly formed Hot Springs County built a good road from Deranch to Thermopolis over the Bridger Mountains, that would become the shorter, preferred route. Also, the State Engineer anticipated that the Yellowstone Highway would be built from Thermopolis to Meeteetse and thence to Cody following the west border of the Bighorn Basin.⁸ Today's State Highway 120 approximates this route, but the route along the Bighorn River through Worland, Basin, Greybull, and then west to Cody eventually became the official route.

The Yellowstone Highway Association was organized in Douglas on September 30, 1915. Gus Holm's (sic) was elected President and L.L. Newton, Treasurer; both were from Cody, Wyoming. Nine commissioners were appointed, one from each county along the route, to publicize the highway and assess each county \$100.00. The *Rocky Mountain News* stated on September 4, 1915: "It would induce thousands of motorists to pass thru (sic) Denver, thence thru the Rocky Mountain National parks to Yellowstone, via the Cody entrance, and out thru the Gardiner entrance to Yellowstone into the Glacier National Park." As stated, Yellowstone National Park was first opened to motor traffic on August 1, 1915. Holm's and Newton traveled the proposed route in October-November 1915, stopping in each town to advertise the project and raise funds. The Association issued a guidebook for travelers that was published in 1916.⁹ In July 1916, it was announced that the Yellowstone Highway was open "to travel by teams and autos." A bridge had been completed by Hot Springs County over the Bighorn River about four miles south of Thermopolis at the mouth of Buffalo Creek. This removed "the last obstacle" along the route of the Yellowstone Highway. Before that time, travelers had to use "an antiquated ferry."¹⁰

In 1916, President Woodrow Wilson signed the Federal Aid Road Act, the first of many acts that would shift the burden of road building from private hands to the public. The act provided \$75 million in matching funds to the states for highway construction over the next five years. As a result, the Wyoming Highway Department was created by the Wyoming State Legislature in 1917, to be administered by a state highway commission. The matching funds were raised through a bond issue of \$2,800,000 approved by voters in 1919 and a second issue in 1921. The Yellowstone Highway, the Lincoln Highway, and the Black and Yellow Trail all qualified for federal aid. However, World War I intervened and temporarily halted large-scale highway construction, and many road projects were undertaken by state and county entities.¹¹

In reality, the original route of the Yellowstone Highway consisted of a combination of existing county roads to link Denver and Yellowstone National Park. These roads were of varying quality and at first represented a considerable challenge to the auto traveler.

In 1920, Kid Wilson, a member of the Cody Club, and Gus Holm's drove from Cody to Cheyenne to log and mark the Yellowstone Highway. The poor quality of the route can be gleaned from Wilson's account. They left Cody on May 20 in a new seven-passenger Buick complete with picks, shovels, log chains, bars and ropes for extricating their vehicle from mud holes. They recorded odometer readings between the towns, and each community was notified of their expected date of arrival so that their local club and city officials could meet with them.

They made their way across the Bighorn Basin without incident, then encountered snow drifts still melting on Birdseye Pass in the Bridger Mountains. Between Shoshoni and Moneta, they bogged down in a mud-hole and spent the night sleeping in the car. A sheep camp tender with a team of horses came to their rescue, and they arrived in Casper the following night. The route south of Casper was in better condition and passed through more settled country.¹²

On their return trip from Cheyenne, they were accompanied by a four-wheel drive army truck loaded with large rocks that they used to mark the route at each road crossing. Each one was painted yellow with a black H to stand for Yellowstone Highway. They also painted fence posts, as well as phone and light poles through the towns to mark the route.¹³

A National Park-to-Park Highway was envisioned as early as September 1915 by Assistant Secretary of the Interior Steven T. Mather. He imagined an auto road that would connect all the National Parks in western America, and the Yellowstone Highway would be the first link.¹⁴ A.L. Westgard, scout for the American Automobile Association (AAA), drove and mapped out the route of the National Park-to-Park Highway from July 28 to August 22, 1920, completing a round trip from Denver. The new highway was officially dedicated on August 26, 1920, in ceremonies held at Overland Park in Denver.¹⁵ Gus Holm's and L.L. Newton became active in both enterprises, the former moving to Denver, where he headed the National Park-to-Park Highway Association.

In April 1920, the Wyoming State Highway Department notified the Yellowstone Highway Association that it was planning to designate most of the Yellowstone Highway as State Highway No. 11 via Shoshoni and Birdseye Pass. The Yellowstone Highway Association responded that they were attempting to follow the exact routes laid out by the State Highway Commission and were encouraging people to use that route.

The 1921 Federal Aid Highway Act directed federal funds to the states for highway maintenance. This appears to have been an update of the 1916 act that had been largely suspended during World War I. Under the Act, each state selected seven percent of its road system for the Federal Aid program. Such roads would link all the county seats and were the beginning of a national "interstate" road system. The Yellowstone Highway was soon designated as one of these key roads.¹⁶

The most significant change to the route of the Yellowstone Highway in Fremont and Hot Springs counties occurred in 1924, when an auto route was completed by the Wyoming Highway Department through the Wind River Canyon, connecting Thermopolis and Shoshoni. This route was incorporated into the Yellowstone Highway, supplanting older routes through Lost Cabin

and over Birdseye Pass Road. Both had been difficult routes to negotiate by automobile and were marked with a plethora of signs confusing to motorists.¹⁷

In 1925, the federal government recognized the need for a national system of highway marking. As a result, the American Association of State Highway Officials requested the Secretary of Agriculture to appoint a board to select a system of interstate highways and to design a system of signs and markers. The Joint Board on Interstate Highways was appointed in 1925. The new system designated east-west routes with even numbers and north-south routes with odd numbers. The standard U.S. route marker became a shield bearing the number of the route, the letters "US", and the name of the state in black on a white background. Although funds for marking were limited in Wyoming, 1,079 U.S. markers were placed on 2,806 miles of U.S. routes within the state during 1926. In Wyoming, the Yellowstone and National Park-to-Park Highway was designated U.S. Route 185 from Cheyenne north to Orin Junction, and U.S. Route 20 from Orin Junction to Yellowstone National Park.¹⁸

By September 30, 1932, nearly all of the Yellowstone Highway in Converse County had been constructed to a 24-foot roadway with a minimum 16-foot wide surface treated with gravel as an all-weather road or paved with a gravel/oil mixture. The major rivers and streams had been crossed using reinforced concrete bridges, dangerous railroad crossings had been eliminated by relocation or the construction of overpasses, and lesser drainages had timber bridges or smaller concrete structures. Finally, it was designated U.S. Route 20.

III. CONSTRUCTION OF THE NORTH PLATTE RIVER BRIDGE

The North Platte River Bridge, Structure No. CNN (Site 48CO2616) is a concrete five-span reinforced, cantilevered structure that is 416 feet long. Construction of the original portion on north side of the structure was begun under Federal Aid Project No. 119 in September 1922, and completed by late June 1923.¹⁹ The construction of the new bridge represented a major event to the town of Douglas as indicated by the regular coverage in the local newspaper.

According to the paper, the new bridge was badly needed because it would be "...replacing the old wooden structure which has been repaired until there is scarcely a place left solid enough to hold a nail..." The new structure was built ninety-one feet south of the old timber bridge that dated from the inception of the town of Douglas. By September 19, bridge material and machinery were arriving daily at the building site. The Levy Construction Company of Denver, Colorado, was the main contractor for bridge construction. A temporary camp was built to

house the construction gang.²⁰ By October 24, the large work force was laying the concrete piers, which needed to be completed before spring runoff. By early January, 1923, the concrete piers were completed, and work had commenced on building the bridge abutments. In February an electric line was run from town to illuminate the bridge so that the crews could work at night. By May 1, the bridge was nearly completed except for "...three spans on which to pour the cement." Although the original bridge plans did not include lighting, the local Douglas Community Club raised \$665.00 for twelve light standards to illuminate the bridge. By May 22, the concrete work on the spans was completed, and crews were grading the approaches, but the posts and conduit for the lights had yet to be installed.²¹ By June 26, the public was crossing the new bridge "...rather than to take a chance on crossing the Platte over the old structure." The local newspaper extolled the virtues of the new bridge:

This bridge is one of a very few of this type ever built and is the best structure of the kind ever constructed in Wyoming. It is of sufficient width to allow two vehicles to pass easily and will be lighted by the city...It stands a little higher than the present bridge and the approach from the western end will do away with the steep grade which has always been a bad feature in the past.²²

The original cost of the bridge totaled \$58,549.33.²³

In 1953, the bridge structure was widened by fifteen feet on the south side, resulting in a thirty-foot wide roadway as well as a pedestrian walkway. The contract for the new construction was let to Etlin E. Peterson, Casper, Wyoming, for a bid of \$100,893. The old bridge had become too narrow to accommodate modern traffic, and several accidents had occurred on the structure. The local newspaper stated, "Within about three months autos and trucks will be able to cross the Platte river highway bridge at the west edge of Douglas without worrying about knocking each other into the waters below." Local residents also feared that Douglas would be bypassed by a realignment of the Yellowstone Highway if the bridge was not widened.²⁴ Construction began in early January 1953, and the contractor had eighty days to complete the widening. By February 3, the crews were making good progress, and the newspaper carried three photographs of the construction process on the front page. Construction of the bridge addition was finished by early summer 1953.

IV. PHYSICAL DESCRIPTION

The North Platte River Bridge is a concrete five-span, reinforced, cantilevered structure that is 416 feet long. Although it resembles a concrete arch bridge, it is in fact a concrete deck girder structure, with the girders carried continuously over the piers. The girders are cantilevered from their pier support with intervening suspension spans and are encased in solid concrete over the first ten or twelve feet of their spans away from the piers. Concrete brackets are regularly-spaced averaging 8 feet apart under the extended deck on both sides.²⁵ The east and west spans are 66 feet 6 inches apart (inside edge of abutment to center of pier), and the three central piers are spaced 94 feet apart. The bases of the central piers are 12 feet 6 inches wide (E-W). The bottom of each pier is buried into the bedrock of the North Platte River and is located 27 feet below the road surface. Above their bases, the piers are 2 feet 9 inches wide (E-W) tapering slightly from bottom to top. The 20-foot wide roadway was protected on either side (north and south) by concrete bridge railings. Columns for the railings were spaced from 13 feet to 13 feet 9 inches. Bridge lamps were added soon after the bridge was completed.

The 1953 addition to the south side of the bridge mirrored the original, so that it was difficult to detect except from below. The original concrete piers were widened, as were the abutments. The new structure also had matching arched spans. The gap between the old and new structures was evident underneath the deck. The new portion did not have regularly-spaced concrete brackets under the extensions. It appears that the concrete railings were removed at that time and replaced with steel railings. The new addition widened the existing 20-foot roadway to 30 feet with an additional 5-foot wide sidewalk.

In conclusion, the North Platte River Bridge is a rare example of a concrete, reinforced, cantilevered structure. It is an uncommon example of large-scale use of concrete construction by the Wyoming Highway Department early in its history. As such, it represents a major departure from the metal truss bridges as well as lesser wood timber bridges commonly used throughout the early twentieth-century Wyoming highway system.

V. ENDNOTES

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2. Nancy M. McClure, *Historic American Engineering Record Addendum to HAER No. WY-24, Yellowstone Roads and Bridge, 1999*, on file at United States Department of the Interior, National Park Service, Yellowstone National Park), pp. 126-130.
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5. No Author, "State Road is Named 'Yellowstone Highway.'" *Thermopolis Record*, Thermopolis, Wyoming, 25 January 1912, p. 1.
6. State Engineer of Wyoming, *Eleventh Biennial Report*, p. 52.
7. Gus Holm's (sic), editor, *Official Route Book of the Yellowstone Highway Association in Wyoming and Colorado* (Copyright by Gus Holm's, Cody, Wyoming), pp.3, 66.
8. State Engineer of Wyoming, *Eleventh Biennial Report*, pp. 53-54.
9. Holm's, *Official Route Book*, pp. 3-4.
10. No Author, "Yellowstone Highway Now Open by Completion of River Bridge." *Thermopolis Record*, Thermopolis, Wyoming, 13 July 1916, p. 1.
11. T.A. Larson, *History of Wyoming* (Lincoln: University of Nebraska Press, 1978) pp. 408-409.
12. Kid Wilson, "Wyoming Hi-Ways." (5 page typewritten manuscript #MSS115, Wyoming State Archives, Cheyenne), pp. 3-4.
13. *Idem.*
14. Lee Whiteley, *The Yellowstone Highway, Denver to the Park, Past and Present* (Boulder, Colorado: Johnson Printing, 2001), p. 24;
15. *Ibid.*, p. 28.
16. *Ibid.*, p. 38.
17. *Ibid.*, p. 123.
18. Wyoming State Highway Commission, *Fifth Biennial Report of the State Highway Commission of the State of Wyoming. For the Period Beginning October 1, 1924 Ending September 30, 1926*, pp. 39-41.

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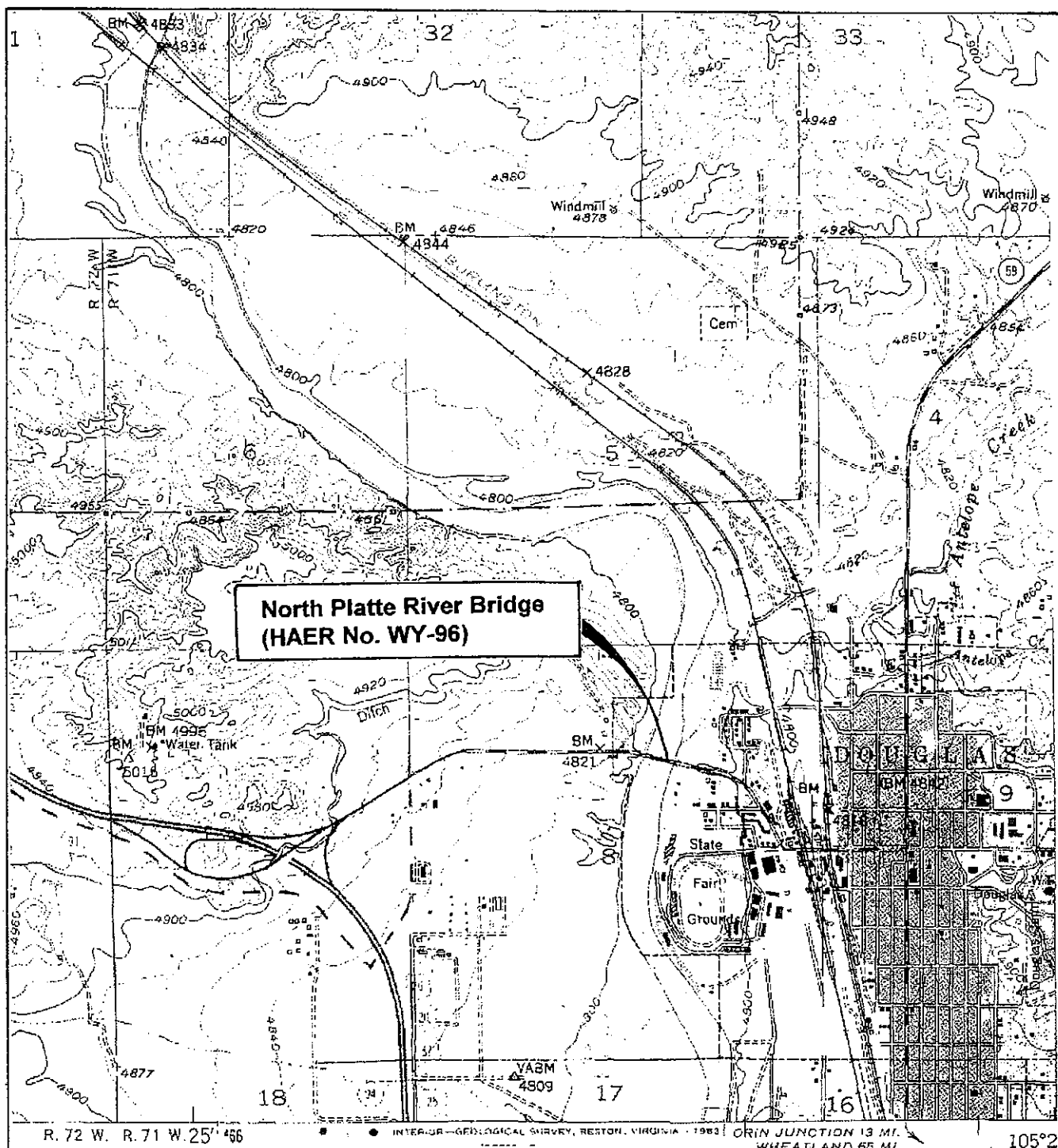
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23. Wyoming State Highway Commission, *Fourth Biennial Report of the State Highway Commission of the State of Wyoming*. For the Period Beginning October 1, 1922 Ending September 30, 1924.

24. No Author, "Let contract for Widening Bridge Here." *Douglas Enterprise*, Douglas, Wyoming, 4 November 1952, p. 1; No author, "Construction Crew Arriving to Start Bridge Widening." *Douglas Enterprise*, Douglas, Wyoming, 30 December 1952, p. 1.

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Portion of the Douglas, Wyoming 7.5' USGS quadrangle (1949, photorevised 1974) showing the location of the North Platte River Bridge spanning the North Platte River on U.S. Highway 20/26 on the west side of Douglas, Converse County, Wyoming.